REMARKS/ARGUMENTS

Claims 1-16, 22, and 23 are pending. Claims 17-21 have been canceled without prejudice or disclaimer.

Claims 1-8, 11-21 and 23 were rejected under 35 U.S.C. 103(a) for allegedly being unpatentable over Sang'udi et al. (US Patent No. 6,480,194). It was indicated that claims 1 and 12-15 could also be rejected under 35 U.S.C. 103(a) for allegedly being obvious in view of Barg et al. (US Patent No. 6,707,454) and Gray et al. ("Data Cube: A Relational Aggregation Operator Generalizing Group-By, Cross-Tab, and Sub-Totals"). A review of Barg et al. and Gray et al. was recommended.

Claim 22 was rejected under 35 U.S.C. 103(a) for allegedly being unpatentable over Sang in view of Rockland ("Using Simulation Software in a Transform Analysis Course").

Claims 9-11 were rejected under 35 U.S.C. 103(a) for allegedly being unpatentable over Sang in view of Okerlund et al. (US Patent No. 6,690,371).

The Present Invention

The present invention as recited in independent claim 1 is directed to a method for analyzing process data. A first image representing first and second dimensions associated with the process data is displayed. A second image representing at least a third dimension associated with the process data is displayed. A region of interest (ROI) in the first image is selected, a calculation is performed to produce a first subset of the process data, and the second image is redrawn based on the first subset of data. Also, a second ROI in the second image is selected, a calculation is performed to produce a second subset of the process data, and the first image is redrawn based on the second subset of data.

The present invention as recited in independent claim 9 is directed to a method for analyzing clinical pathways. A two dimensional presentation of clinical data and a one dimensional presentation of the clinical data are presented. A selection of a region of interest (ROI) from the two dimensional presentation is received. A first subset of the process data is calculated and the one dimensional presentation is redrawn based on the first subset of the process data. In addition, a selection of a second ROI from the one dimensional presentation is

received. A second subset of the process data is calculated and the two dimensional presentation is redrawn based on the second subset of the process data.

The present invention as recited in independent claim 12 is directed to a computer program product for analyzing process data, including code that displays the process data in a first image and code that displays the process data in a second image, where the first image represents first and second dimensions of the process data and the second image represents at least a third dimension of the process data. There is code that receives a region of interest (ROI) selected from the first image and code to redraw the second image based upon a first subset of data calculated from the ROI. There is code that receives a second ROI selected from the second image and code to redraw the first image based upon a second subset of data calculated from the second ROI.

The present invention as recited in independent claim 13 is directed to an apparatus for analyzing process data. A processor displays the process data in a first image and in a second image, where the first image represents first and second dimensions of the process data and the second image represents at least a third dimension of the process data. The processor receives a region of interest (ROI) selected from the first image and redraws the second image based upon a first subset of data calculated from the ROI. The processor receives a second ROI selected from the second image and redraws the first image based upon a second subset of data calculated from the second ROI.

The present invention as recited in independent claim 14 is directed to an apparatus for analyzing process data. The apparatus includes a means for displaying the process data in a first image and in a second image, where the first image represents first and second dimensions of the process data and the second image represents at least a third dimension of the process data. The apparatus includes a means for receiving a region of interest (ROI) selected from the first image and for redrawing the second image based upon a first subset of data calculated from the ROI. The apparatus includes a means for receiving a second ROI selected from the second image and for redrawing the first image based upon a second subset of data calculated from the second ROI.

The present invention as recited in independent claim 15 is directed to a system for analyzing process data. An application server abstracts the process data stored in a database server into at least three dimensions and forwards the abstracted process data to an application client. The application client provides a first image and a second image, wherein at least one correlation between at least two of the three dimensions is indicated using the first image and a quantity measure in at least one of the three dimensions is indicated using the second image. The application client receives a selection of a region of interest (ROI) selected from the first image and redraws the second image based upon a first subset of the process data calculated based on the ROI. The application client receives a selection of a second ROI selected from the second image and redraws the first image based upon a second subset of the process data calculated based on the second ROI.

The present invention as recited in independent claim 16 is directed to a method for analyzing process data and includes providing a plurality of visualization devices, including a first visualization device and a second visualization device, where the first visualization device indicates at least one correlation between at least two of three dimensions of the process data and the second visualization device indicates a quantity measure by at least one of the three dimensions. The method further includes receiving a selection of a region of interest (ROI) made from the first visualization device and subsequently redrawing the second visualization device based on the ROI. The method further includes receiving a selection of a second region of interest made from the second visualization device and subsequently redrawing the first visualization device based on the second ROI.

The Sang'udi et al. Reference Distinguished

Sang'udi et al. disclose a summary window 120 within which a user can select a point to make a data query. In response, a data visualization 110 is formed covering the data at the point selected from the summary window. *Col. 8, lines 4-15.* Thus, Sang'udi et al. teach selection of a point in the summary window 120 and forming a data visualization 110 covering the selected point.

Sang'udi et al. further disclose that the user can navigate through the data visualization 110 by defining a navigation path in the summary window 120. The data visualization 110 will then be displayed as an animation. *Id at lines 16-20.* Sang'udi et al. therefore teach that a navigation path is defined in the summary window 120, and then the data visualization 110 will then be displayed as an animation.

Sang'udi et al. do not show the converse series of actions where there is a selection of an ROI in the data visualization 110 and a resulting redrawing of the summary window 120.

Therefore, as to **claim 1**, Sang'udi et al., as understood, do not teach or suggest a method for analyzing process data which includes steps of selecting a region of interest (ROI) in a first image, performing a calculation to produce a first subset of the process data, and redrawing a second image based on the first subset of data, and steps of selecting a second ROI in the second image, performing a calculation to produce a second subset of the process data, and redrawing the first image based on the second subset of data.

As to **claim 9**, Sang'udi et al., as understood, do not teach or suggest the following method for analyzing clinical pathways. A two dimensional presentation of clinical data and a one dimensional presentation of the clinical data are presented. A selection of a region of interest (ROI) from the two dimensional presentation is received. A first subset of the process data is calculated and the one dimensional presentation is redrawn based on the first subset of the process data. Sang'udi et al. do not teach or suggest the selection of a second ROI from the one dimensional presentation is received, where a second subset of the process data is calculated and the two dimensional presentation is redrawn based on the second subset of the process data.

As to **claim 12**, Sang'udi et al., as understood, do not teach or suggest a computer program product for analyzing process data, that includes code that displays the process data in a first image and code that displays the process data in a second image, where the first image represents first and second dimensions of the process data and the second image represents at least a third dimension of the process data. There is code that receives a region of interest (ROI) selected from the first image and code to redraw the second image based upon a first subset of

data calculated from the ROI. Sang'udi et al. do not teach or suggest code that receives a second ROI selected from the second image and code to redraw the first image based upon a second subset of data calculated from the second ROI.

As to **claim 13**, Sang'udi et al., as understood, do not teach or suggest an apparatus for analyzing process data. A processor displays the process data in a first image and in a second image. The processor receives a region of interest (ROI) selected from the first image and redraws the second image based upon a first subset of data calculated from the ROI. Sang'udi et al. do not teach or suggest that the processor receives a second ROI selected from the second image and redraws the first image based upon a second subset of data calculated from the second ROI.

As to **claim 14**, Sang'udi et al., as understood, do not teach or suggest an apparatus for analyzing process data. The apparatus includes a means for displaying the process data in a first image and in a second image. The apparatus includes a means for receiving a region of interest (ROI) selected from the first image and for redrawing the second image based upon a first subset of data calculated from the ROI. Sang'udi et al. do not teach or suggest that the apparatus includes a means for receiving a second ROI selected from the second image and for redrawing the first image based upon a second subset of data calculated from the second ROI.

As to **claim 15**, Sang'udi et al., as understood, do not teach or suggest a system for analyzing process data. Sang'udi et al. do not teach or suggest an application server abstracts the process data forwards the abstracted process data to an application client. Sang'udi et al. do not teach or suggest that the application client provides a first image and a second image. Sang'udi et al. do not teach or suggest that the application client receives a selection of a region of interest (ROI) selected from the first image and redraws the second image based upon a first subset of the process data calculated based on the ROI. Sang'udi et al. do not teach or suggest that the application client receives a selection of a second ROI selected from the second image and redraws the first image based upon a second subset of the process data calculated based on the second ROI.

As to **claim 16**, Sang'udi et al., as understood, do not teach or suggest a method for analyzing process data which includes providing a plurality of visualization devices,

including a first visualization device and a second visualization device. The method further includes receiving a selection of a region of interest (ROI) made from the first visualization device and subsequently redrawing the second visualization device based on the ROI. Sang'udi et al. do not teach or suggest receiving a selection of a second region of interest made from the second visualization device and subsequently redrawing the first visualization device based on the second ROI.

The Okerlund et al. Reference Distinguished

Okerlund et al. were cited for showing the patient data. However, a distinguishing aspect of the present invention is the presentation of two displays of process data, wherein there is a selection of an ROI (region of interest) from the first display and a redrawing of the second display based on information in the selected ROI. There is a selection of another ROI, this time from the second display and a redrawing of the first display based on information in the second selected ROI. Okerlund et al. does not teach at least this aspect of the present invention.

The Barg et al. Reference Distinguished

Barg et al. were not relied on for any grounds of rejection. However, the examiner recommended that a review of the reference nonetheless be made.

Barg et al. disclose visualization of multidimensional data. They describe pivot tables using two visual metaphors: a "single measure perspective" consisting of linked bar charts and a multiscape landscape visualization; and an "anchored measures perspective" for displaying several measures simultaneously. *Abstract.* Barg et al. describe a single measure perspective, beginning on column 6, line 18 with respect to Fig. 2. A display of the single measure perspective includes a toolbar 130, a dimensional view portion 110, a single measure view portion 120, and an optional totals table portion 140. *Col. 6, lines 49-51.*

The dimensional view portion 110 includes one or more interactive dimensional views 112. Fig. 2 shows that the dimensional view portion is implemented as a bar chart view portion. In the embodiment of the single measure perspective shown in Fig. 2, one dimensional view 112 is displayed in the dimensional view portion 110 for each dimension of the selected

measure. Also, the views in each dimensional view 112 can be altered by it corresponding slider bar portion 116. *Col. 7, lines 12-16.*

However, a distinguishing aspect of the present invention is the presentation of two displays of process data, wherein there is a selection of an ROI (region of interest) from the first display and a redrawing of the second display based on information in the selected ROI. There is a selection of another ROI, this time from the second display and a redrawing of the first display based on information in the second selected ROI. Barg et al., as understood, do not show this aspect of the present invention.

The Gray et al. Reference Distinguished

Gray et al. were not relied on for any grounds of rejection. However, the examiner recommended that a review of the reference nonetheless be made.

Gray et al. disclose a "cube operator" as an N-dimensional generalization of the SQL aggregate functions and the GROUP BY operator. Their paper begins in Sections 1 and 2 with a description of conventional SQL operations. They introduce the CUBE operator in Section 3 where, in Figure 4, they show how the operator works. An underlying table (on the left) is subjected to the CUBE operator to produce the data cube (on the right). Section 6 mentions that some users define triggers for the underlying tables so that when the table change, the cube is dynamically updated.

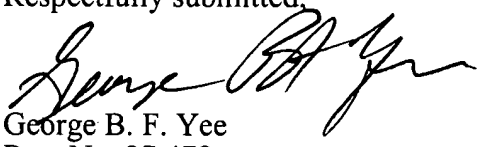
A distinguishing aspect of the present invention, however, is the presentation of two displays of process data, wherein there is a selection of an ROI (region of interest) from the first display and a redrawing of the second display based on information in the selected ROI. There is a selection of another ROI, this time from the second display and a redrawing of the first display based on information in the second selected ROI. Gray et al., as understood, do not show this aspect of the present invention.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,



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